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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,237	09/04/2003	Alan Peter Druschitz	65,278-006	6583
27305	7590	07/14/2005	EXAMINER	
HOWARD & HOWARD ATTORNEYS, P.C. THE PINEHURST OFFICE CENTER, SUITE #101 39400 WOODWARD AVENUE BLOOMFIELD HILLS, MI 48304-5151			YEE, DEBORAH	
		ART UNIT		PAPER NUMBER
				1742

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/655,237	ALAN PETER DRUSCHITZ ET AL
	Examiner Deborah Yee	Art Unit 1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_\_.  
2a)  This action is **FINAL**.                    2b)  This action is non-final.  
3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-36 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1-20-05, 3-31-04.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: IDS 1-26-04

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 to 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deards et al (US Patent 5,837,069) cited by applicant in IDS dated 1-20-05 alone or in view of English abstract of Japanese patent 61174333A or Keyser teaching.

3. Deards on lines 22-55 in column 3 and claims 4 to 8 in columns 5 to 6 discloses an analogous cast iron alloy having a pearlitic microstructure processed by austenitizing at 750 to 950C (equivalent to 1382 to 1742F and overlaps claimed range of 1380 to 1500F) for 0.5 to 2.5 hours (within claimed range of at least 10 minutes); rapidly quenching in a salt bath to prevent austenite structure from converting back into a pearlitic structure to a temperature of 200 to 400C (equivalent to 392 to 752F and overlaps claimed range 575 to 750F) for a period of time long enough to ensure ausferritic microstructure (one prior art example on lines 13 to 15 of column 4 discloses 2 hours which would be within the claimed range of at least 8 minutes). Note that the overlapping or encompassing time and temperature ranges establishes a *prima facie* case of obviousness because it would be obvious to one of ordinary skill in the art to select the claimed ranges from the broader disclosure of the prior art since the prior art has the same utility ( components from an automobile engine). See MPEP 2144.05

4. Deards on lines 45 to 47 of column 3 discloses a starting material which can be pearlitic and/or ferritic structure. Hence prior art starting material can be 100% pearlitic and hence meet dependent claims.

5. Deards discloses austenitizing and austempering temperatures and time ranges that overlap those recited by the dependent claims .

6. Prior art process discloses austenitizing followed by direct quenching to austempering temperature to prevent the formation of pearlite; hence cooling within a time range of 5 to 180 seconds recited by dependent claims would be suggested.

7. Prior art teaches cooling with a salt bath which would conventionally comprise nitrate salts and hence meet the limitations recited by dependent claims.

8. Even though prior art does teach cooling with a fluidized bed as recited by claim 11, such would be a patentable difference. Note that fluidized bed is a well known technique in the metallurgical art for cooling cast iron and can be used as an alternative to cooling with a salt bath (see the English abstract of JP'333) .

9. Prior art discloses ausferritic microstructure comprising austenite and ferrite. Even though prior art does not specifically teach an equiaxed ferrite with islands of austenite as recited by the claims, such structure would be expected since composition and process of making are essentially the same, and in absence of proof to the contrary. Applicant provides ADI (austempered ductile iron ) article as comparative test data but this is invalid since it is made with a ferritic-pearlitic steel rather than pearlitic steel and hence is not representative of the prior art steel of Deard.

10. Lines 15 to 21 of column 3 discloses uses Deard steel for manufacturing vehicle components which would include the crankshaft and chassis recited by dependent claims.

11. Prior art process on lines 51 to 55 in column 2 discloses forming an iron casting having a pearlitic structure as a starting material. Even though prior art does not teach how pearlitic structure is obtained as recited by claim 15, such would be inferred since the standard method of obtaining desired microstructure is by homogenizing steel at high temperature followed by cooling and holding at a temperature and time range at which phase occurs based on phase diagrams. See Keyser teaching. In any event the steps recited by claim 15 are the conventional means for producing pearlite and would be inferred by prior art process.

12. Deards on lines 38 to 45 in column 3 discloses a cast iron alloy having a cast iron alloy containing carbon, silicon, nickel, copper and molybdenum in wt% ranges that overlap or within those recited by claims 30, 35 and 36. Even though properties recited by claims 31 to 34 are not disclosed by prior art, such would be expected since composition and process limitations are essentially the same, and in absence of proof to the contrary.

***Information Disclosure Statement***

13. Some of the references cited by applicant in IDS have not been considered because applicant has not provided publication date.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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